

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

FUMA INTERNATIONAL LLC,)	
)	
Plaintiff,)	
)	
v.)	1:19-CV-260
)	1:19-CV-660
R.J. REYNOLDS VAPOR)	
COMPANY,)	
)	
Defendant.)	

Memorandum Opinion and Order

Catherine C. Eagles, District Judge.

The plaintiff, Fuma International LLC, has sued the defendant, R.J. Reynolds Vapor Company, for infringing two electronic cigarette patents. RJR has filed two *Daubert* motions to exclude the testimony of Fuma's expert, Dr. Glenn Vallee. One is directed at his testimony on copying and willful infringement and the other is directed at his testimony on secondary considerations of nonobviousness. The motions will be granted to the extent Dr. Vallee bases his opinions on non-technical analysis within the capacity of the jury, and otherwise will be denied.

I. Overview

Fuma accuses two of RJR's vaping products, the VUSE Ciro and the VUSE Solo,¹ of willful infringement of two patents issued to Fuma: U.S. Patent Nos. 9,532,604 ('604

¹ There are two versions of the Solo: the "Gen 1" and "Gen 2." Fuma alleges that both versions violate the patents-in-suit, and the parties agree that the differences are immaterial for

patent), *see* Doc. 76-2, and 10,334,881 ('881 patent). *See* Doc. 76-3. Both patents apply to each accused product. The Court previously construed various disputed terms in each of the patents. Doc. 95.

At summary judgment, the Court found no disputed questions of material fact as to several infringement issues and determined that the *Ciro* infringes the '604 and '881 patents and that the *Solo* infringes the '881 patent. Doc. 139. The matter is set for trial to determine, among other things, whether the patents-in-suit are valid and whether RJR's infringement was willful.

RJR has filed two *Daubert* motions to exclude certain testimony by Dr. Vallee, a professor of mechanical engineering proffered as an expert witness by Fuma on the issues of willful infringement, Doc. 156, and patent validity. Doc. 163.² Dr. Vallee has a professional background in quality assurance, mechanical engineering, and consumer product design and development, including mechanical and electromechanical products. Doc. 120-4 at ¶¶ 4–6. He has experience with the design of a “wide variety of products containing threaded connections, heating elements, and liquid/air fluid flow.” *Id.* at ¶ 5.

Expert testimony is admissible if it “rests on a reliable foundation and is relevant[.]” *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 597 (1993). Whether expert evidence is reliable is primarily a question of the validity of the expert's methodology, not the conclusions reached. *In re Lipitor (Atorvastatin Calcium) Mktg.*,

purposes of this motion. *See* Doc. 120 at 4; Doc. 120-1 at ¶ 27. The Court will refer to the “Solo” for ease of reading.

² Dr. Vallee's expected testimony is before the Court in the form of reports.

Sales Pracs. & Prods. Liab. Litig., 892 F.3d 624, 631 (4th Cir. 2018); *Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1295–96 (Fed. Cir. 2015).

II. Dr. Vallee’s Testimony on Copying and Willful Infringement

If RJR willfully infringed the patents-in-suit as Fuma alleges, Doc. 1 at ¶¶ 176–78, Fuma may receive increased damages. 35 U.S.C. § 284; *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1930 (2016) (“This Court . . . described § 284 . . . as providing that ‘punitive or increased damages’ could be recovered ‘in a case of willful or bad-faith infringement.’”). On the question of willful infringement, Dr. Vallee is expected to testify that RJR copied Fuma’s e-cigarette design, that RJR rejected other e-cigarette designs that do not resemble its Solo and Ciro products, and that RJR’s conduct fell below industry standards of behavior. *See* Doc. 157-1 at ¶¶ 15, 92–122; Doc. 157-2 at ¶¶ 90–114. RJR seeks to exclude this testimony as unreliable under Federal Rule of Evidence 702 and *Daubert*. Doc. 156.

Willful infringement is a question of fact. *Polara Eng’g Inc. v. Campbell Co.*, 894 F.3d 1339, 1353 (Fed. Cir. 2018). To establish willfulness, the patentee must show the accused infringer had the subjective intent to infringe at the time of the challenged conduct. *Halo Elecs., Inc.*, 136 S. Ct. at 1933. The Federal Circuit has defined subjective willfulness as “proof that the [accused infringer] acted despite a risk of infringement that was ‘either known or so obvious that it should have been known to [it].’” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1371 (Fed. Cir. 2017) (quoting *WesternGeco LLC v. ION Geophysical Corp.*, 837 F.3d 1358, 1362 (Fed. Cir. 2016), *rev’d on other grounds*, 138 S. Ct. 2129 (2018)). In assessing the

accused infringer's willfulness, the factfinder looks to the totality of the circumstances. *See Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp.*, 383 F.3d 1337, 1342–43 (Fed. Cir. 2004) (en banc).

A. Copying

Evidence that an alleged infringer intentionally copied the ideas or design of a patent holder is relevant to willfulness. *See C R Bard Inc. v. AngioDynamics, Inc.*, 979 F.3d 1372, 1380 (Fed. Cir. 2020) (noting that evidence of intentional copying “support[s] a jury verdict of willfulness”); *Eko Brands, LLC v. Adrian Rivera Maynez Enters., Inc.*, 946 F.3d 1367, 1379 (Fed. Cir. 2020) (stating that a factfinder can “properly consider” intentional copying to determine willfulness). Dr. Vallee opines that RJR copied Fuma's claimed invention and provides reasons for his opinion. Doc. 120-4 at ¶¶ 95–117. RJR says this opinion is inadmissible because it lacks the technical analysis required under Federal Rule of Evidence 702. Doc. 157 at 12–17.

RJR is correct that some of the reasons Dr. Vallee proffers to support his conclusion of copying do not involve technical analysis. For example, he summarizes evidence about RJR's search for new e-cigarette designs, internal communications between RJR employees lauding Fuma's e-cigarette design, and internal RJR documents in which RJR employees discuss the importance of replicating existing technologies during the e-cigarette design process. Doc. 120-4 at ¶¶ 95–96, 99, 104, 108, 110, 113. None of this evidence involves technical considerations and a jury does not need an expert's help to evaluate it.

But Dr. Vallee’s opinion is also based on technical analysis on several different points. He discusses technical design similarities between Fuma’s patented e-cigarette design and RJR’s Solo and Ciro products, such as a transverse heating element and central airflow passageway. Doc. 120-4 at ¶¶ 102–03; Doc. 157-2 at ¶¶ 104–06. His testimony that RJR rejected alternative designs different from Fuma’s patented technology when developing the Solo and Ciro necessarily involves a technical analysis of those alternative designs. Doc. 120-4 at ¶¶ 111–12. He also uses a technical analysis to explain his opinion that RJR’s argument that Fuma’s e-cigarette design was different than its own is not valid, and that RJR’s portrayal of Fuma’s e-cigarette design could not electrically function. Doc. 157-2 at ¶¶ 108–09.

At bottom, Dr. Vallee’s opinion that RJR copied Fuma’s design is grounded in a technical analysis and will help the jury determine whether RJR intended to copy Fuma’s claimed invention when designing the Solo and Ciro e-cigarettes. It is relevant to the question of willfulness and reliable because it is grounded in Dr. Vallee’s expertise as a mechanical engineer and consumer product designer. Doc. 120-4 at ¶¶ 4–6. But to the extent that Dr. Vallee analyzes or summarizes non-technical circumstantial evidence to conclude that RJR copied Fuma’s claimed inventions, his testimony will not be helpful to the jury and will be excluded. *See Persinger v. Norfolk & W. Ry. Co.*, 920 F.2d 1185, 1188 (4th Cir. 1990) (“Rule 702 excludes expert testimony on matters within the common knowledge of jurors.”); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 148–49 (1999) (explaining that an expert’s reliability stems from testimony rooted in her expertise).

B. Intent, Motive, or State of Mind

Expert testimony about an alleged infringer's intent, motive, or state of mind is inadmissible. *See In re Rezulin Prods. Liab. Litig.*, 309 F. Supp. 2d 531, 545–47 (S.D.N.Y. 2004). First, intent is a question for the trier of fact that does not require expert testimony. *See BorgWarner, Inc. v. Honeywell Int'l, Inc.*, 750 F. Supp. 2d 596, 611 (W.D.N.C. 2010). Second, expert testimony concerning state of mind, intent, or purpose is unreliable because it is not grounded in analytically sound principles or methods. *See DePaepe v. General Motors Corp.*, 141 F.3d 715, 720 (7th Cir. 1998). And the parties agree that no expert can provide testimony concerning the ultimate issue of intent or RJR's motives and state of mind. Doc. 157 at 17–20; Doc. 181 at 13–14. Dr. Vallee also notes throughout his report that he has not been asked to opine on the ultimate issue of willfulness. *See, e.g.*, Doc. 120-4 at ¶¶ 15, 39, 93.

Despite this, Dr. Vallee's report contains at least two explicit opinions about intent. *See, e.g., id.* at ¶ 122 (asserting a particular failure by RJR “tends at least to show an intent to hide RJR's knowledge of and copying of the Fuma patented e-cigarette”); *id.* at ¶ 95 (asserting that RJR “intentionally copied the Fuma patented design”). His report also contains other opinions about RJR and its employees' intent and motives, even if those exact words are not used. *Id.* at ¶ 121 (stating his conclusion about “the reason the Fuma patented design was . . . copied by RJR”). This will not be allowed at trial.

But Dr. Vallee is not prohibited from providing opinions about technical aspects of RJR's alleged infringement that could support a finding of specific intent to infringe. As already noted, Dr. Vallee may testify about the technical design similarities that

support his opinion that RJR copied FUMA's design, *id.* at ¶¶ 102–03, 116, about the dissimilar technology in alternative designs that RJR rejected when developing the Solo and Ciro, *id.* at ¶¶ 111–12, and about the absence of concept sketches or other documents created by RJR that show it independently developed the Solo and Ciro. *Id.* at ¶ 114.

C. Pre-Patent Conduct

RJR maintains that Dr. Vallee's opinions concerning copying and willfulness are unreliable because his testimony concerns RJR's conduct before Fuma's '604 and '881 patents issued. Doc. 157 at 20–21. This argument is without merit because pre-patent conduct can be relevant and helpful to the jury, and it would be so here.

The factfinder evaluates willfulness in light of the totality of the circumstances, *see Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH*, 383 F.3d at 1342–43, of which pre-patent conduct can be a part. *See Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1581 (Fed. Cir. 1992). Although “[k]nowledge of the patent alleged to be willfully infringed [is a] prerequisite to enhanced damages,” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1341 (Fed. Cir. 2016), pre-patent conduct, such as copying, is still relevant to an alleged infringer's subjective intent. *See Sonos, Inc. v. D&M Holdings Inc.*, No. 14-1330-WCB, 2017 WL 5633204, at *3–4 (D. Del. Nov. 21, 2017) (collecting cases).

The fact that Dr. Vallee's opinions supporting Fuma's claims about copying and willfulness include testimony about RJR's pre-patent conduct is not a basis to exclude his opinions. The pre-patent conduct, which the Court need not summarize here, is highly probative of RJR's intent and motives.

D. Acting Inconsistently with Industry Standards of Behavior

The parties appear to agree that whether an infringer complied with or acted inconsistently with industry standards is generally relevant to willfulness. *See* Doc. 157 at 22–26; Doc. 181 at 17–22. But Dr. Vallee’s opinions purporting to measure RJR’s conduct against industry standards, Doc. 120-4 at ¶¶ 94, 100, will not be helpful to the jury. The opinion of an expert is not required to point out that patent infringement is inconsistent with internal RJR policies. *Id.* at ¶ 94. Dr. Vallee’s assertions about industry practice are overbroad and conclusory, and none of his observations are clearly rooted in his professional experience. *Id.* at ¶¶ 94, 100. As with some other parts of his testimony, he is summarizing evidence that does not require technical assistance to understand. This testimony will be excluded.

E. Other Issues Pertaining to Willfulness

RJR contends that legal conclusions about willfulness within Dr. Vallee’s expert reports are inadmissible. Doc. 157 at 26–27. It also objects to Dr. Vallee’s statements about RJR’s failure to produce opinions of counsel as evidence that RJR had no reasonable basis for believing it did not infringe. *Id.* at 27. Fuma states that Dr. Vallee will not testify about either issue at trial. Doc. 181 at 23–24. The motion is therefore granted in part and denied in part to this extent: if and when Fuma intends to elicit such testimony, Fuma shall advise the Court and RJR outside the presence of the jury. The Court will otherwise address any such problems if and when they arise at trial.

RJR also asserts that Dr. Vallee should not be permitted to testify about Fuma’s reasons for waiting two years to assert infringement, as he is not qualified to give an

opinion on the matter. Doc. 157 at 28. As discussed *supra*, Dr. Vallee's expert opinion must be rooted in his specialized knowledge. *See Kumho Tire Co.*, 526 U.S. at 148–49. His opinions about a litigant's tactical reasons for delaying patent litigation are beyond his expertise and will be excluded. Fuma notes that Dr. Vallee was responding to the testimony of RJR's expert, Dr. John M. Collins, who Fuma says also offers testimony about Fuma's reasons for delay in asserting its patent rights. Doc. 181 at 25. No motion is pending as to any similar aspect of Dr. Collins's expected testimony, which can be evaluated by the same standards as Dr. Vallee's proffered testimony if and when Dr. Collins so testifies.

III. Dr. Vallee's Testimony on the Secondary Considerations of Nonobviousness

RJR raised the affirmative defense that Fuma's claimed inventions were obvious at the time it filed for patent protection, and therefore Fuma's '604 and '881 patents are invalid for failing to satisfy the requirements of 35 U.S.C. § 103. *See* Doc. 53 at 8–9. RJR has the burden of proof to show that Fuma's '604 and '881 patents are not valid. 35 U.S.C. § 282(a); *see also Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 100 (2011). In support of this defense, RJR expects to offer expert testimony from Dr. Collins. Fuma expects to offer testimony from Dr. Vallee to rebut the testimony of Dr. Collins, which RJR now seeks to exclude via *Daubert* motion. Doc. 163.

A. Obviousness and Secondary Considerations of Nonobviousness

To receive patent protection, a claimed invention must, among other things, have been nonobvious at the effective filing date of the invention. *See* 35 U.S.C. § 103; *Microsoft Corp.*, 564 U.S. at 96. “[A]n alleged infringer may assert the invalidity of the

patent—that is, he may attempt to prove that the patent never should have issued in the first place.” *Microsoft Corp.*, 564 U.S. at 96. One way to prove a patent’s invalidity is by showing that a claimed invention “would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103; *Microsoft Corp.*, 564 U.S. at 96.

In determining whether a patent would have been “obvious” at the time of its effective filing date, the Federal Circuit has set forth various factors that may “serve to ‘guard against slipping into use of hindsight,’ and to resist the temptation to read into the prior art the teachings of the invention in issue.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1052 (Fed. Cir. 2016) (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 36 (1966)). These factors are known as “secondary considerations,” or “objective indicia of non-obviousness,” and they include:

- (1) commercial success enjoyed by devices practicing the patented invention;
- (2) industry praise for the patented invention;
- (3) copying by others; and
- (4) the existence of a long-felt but unsatisfied need for the invention.

Id.

For evidence of these secondary considerations to be probative of nonobviousness, the patentee must establish a nexus between the secondary considerations and the claimed invention. *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010). For example, for a product’s “commercial success” to support nonobviousness, that success

must be a direct result of the claimed invention—not some other feature within the product or the product as a whole. *See id.*; *In re GPAC Inc.*, 57 F.3d 1573, 1580–81 (Fed. Cir. 1995).

B. Dr. Vallee’s Opinions

Generally, Dr. Vallee is expected to discuss the patented design, which he states placed a “heating coil and wick transversely across a central airflow passageway” and surrounded the “passageway and heating coil with a solution holding medium.” Doc. 164-1 at ¶ 298. According to Dr. Vallee, Fuma’s design “enhance[d] the vaporization of the e-liquid and improve[d] the user experience,” thus removing a burnt metallic taste when vaping. *Id.* at ¶¶ 293, 306.

Dr. Vallee is also expected to testify that there is a nexus between several secondary considerations of nonobviousness and Fuma’s claimed invention. As previously discussed, Dr. Vallee will offer the opinion that RJR, and others within the e-cigarette industry, copied Fuma’s patented invention. *Id.* at ¶¶ 296–99. He will also testify that Fuma’s patented invention met a long-felt but unmet need in the e-cigarette industry, *id.* at ¶¶ 300–09, that RJR and the e-cigarette industry praised Fuma’s patented invention, *id.* at ¶ 310, that the products embodying Fuma’s patented invention enjoyed commercial success, *id.* at ¶¶ 311–14, and that Fuma’s patented invention departed from accepted wisdom in the field. *Id.* at ¶ 315.

RJR first contends that Dr. Vallee’s testimony is inadmissible because he fails to establish a nexus between the secondary considerations of nonobviousness and Fuma’s claimed inventions. Doc. 164 at 13–28. But on this point RJR does nothing more than

attack the merits of Dr. Vallee’s opinions, not his methodology. *Summit 6 LLC*, 802 F.3d at 1296.

Whether a nexus exists between a claimed invention and secondary considerations of nonobviousness is a question for the factfinder. *See Apple Inc.*, 839 F.3d at 1052–57; *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012). As such, parties are entitled to present evidence that a nexus exists between a claimed invention and secondary indicia of nonobviousness, including expert testimony. *See Apple Inc.*, 839 F.3d at 1052–57. At trial, RJR can challenge Dr. Vallee’s opinion that a nexus exists between Fuma’s claimed inventions and secondary considerations of nonobviousness with “[v]igorous cross-examination [and] presentation of contrary evidence.” *Daubert*, 509 U.S. at 596.

RJR also maintains that Dr. Vallee’s testimony concerning each secondary consideration of nonobviousness is inadmissible because it lacks scientific and technical analysis. As with his testimony on copying, this argument has some merit but is not accurate as to all of Dr. Vallee’s testimony.

Part of Dr. Vallee’s testimony concerns the technical intricacies of Fuma’s claimed invention, RJR’s products, and other e-cigarette designs. Those opinions are relevant and reliably grounded in his expertise as a mechanical engineer and consumer product designer and are therefore admissible. Doc. 120-4 at ¶¶ 46. For example, Dr. Vallee discusses how Fuma’s claimed invention met a long-felt but unmet need because its design led to “enhanced vaporization of e-liquid” and “removed a burnt metallic taste when vaping.” Doc. 164-1 at ¶¶ 293, 306. He also reviewed other e-cigarette designs

and concluded that they emulated Fuma's claimed invention. *Id.* at ¶ 298. This sort of testimony is helpful to the jury because it precisely identifies the technical basis for Dr. Vallee's conclusion that a nexus exists between secondary considerations of nonobviousness and Fuma's claimed inventions.

Dr. Vallee, however, also draws conclusions that are unrelated to his specialized knowledge. For example, Dr. Vallee concludes that there was a nexus between industry praise and Fuma's claimed invention, in part based on an RJR executive's complimentary description of Fuma's e-cigarette as "providing the closest experience to a burn-type cigarette as compared to all the other e-cigarette devices that [the executive] had been evaluating." *Id.* at ¶ 310. But a jury does not need expert assistance to evaluate whether an RJR executive's statement constitutes praise.

In sum, where Dr. Vallee uses his specialized knowledge to discuss the claimed invention's design and its relation to secondary considerations of nonobviousness, his expert opinion will be helpful to the jury and is reliable and relevant. But Dr. Vallee's statements about secondary considerations of nonobviousness in which he summarizes non-technical evidence and draws conclusions from that evidence are inadmissible. Those opinions are not rooted in Dr. Vallee's expertise and are therefore unreliable. *See Kumho Tire Co.*, 526 U.S. at 148–49.

C. Presumption of Nexus

The parties argue about whether a presumption of nexus applies between the products embodying Fuma's patented invention and secondary considerations of nonobviousness, Doc. 182 at 34; Doc. 198 at 5–6, but the Court does not need to resolve

that question to resolve the pending motions. It is a more appropriate issue to discuss at the close of the evidence and, if appropriate, during the charge conference, since it turns on questions of fact. *See Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (“Whether a product is coextensive with the patented invention, and therefore whether a presumption of nexus is appropriate in a given case, is a question of fact.”).

IV. Conclusion

Expert testimony must be relevant and reliable. Where an expert bases his conclusions on non-technical analysis or circumstantial evidence that a jury can independently understand, the expert’s opinion is not reliable because it is not rooted in his expertise. Here, some of Dr. Vallee’s testimony concerning willfulness, copying, and secondary considerations of nonobviousness relies on non-technical analysis that is unreliable and unhelpful to the jury. Accordingly, that part of his testimony is inadmissible. But not all of Dr. Vallee’s expert opinion is non-technical. Where Dr. Vallee’s opinions are rooted in a technical analysis on issues relevant to willfulness, copying, and secondary considerations of nonobviousness, his testimony is admissible.

It is **ORDERED** that the defendant’s *Daubert* motions to exclude testimony and opinions of Dr. Glenn Vallee on issues of copying and infringement, Doc. 156, and secondary considerations of nonobviousness, Doc. 163, are **GRANTED IN PART** and **DENIED IN PART** as stated herein and as summarized here:

1. Testimony by Dr. Vallee based on non-technical analysis within the capacity of the jury will be excluded.

2. Testimony by Dr. Vallee that relies on technical analysis rooted in his expertise will not be excluded.
3. Testimony by Dr. Vallee about industry practice and RJR's internal standards will be excluded.
4. Testimony by Dr. Vallee offering opinions on motive, intent, or willfulness will be excluded.
5. Testimony by Dr. Vallee about RJR's failure to produce opinions of counsel as evidence will be excluded unless Fuma obtains advance permission from the Court outside the presence of the jury.

This the 15th day of October, 2021.



UNITED STATES DISTRICT JUDGE